Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1 (Currently Amended): A microarray cartridge, comprising:

a body having a wall forming a cavity surrounded by a mating surface, said body comprising a reaction chamber and at least one microarray support contained within the cavity, said at least one microarray support ~~being dimensioned to support~~ supporting a microarray slide within the cavity such that a surface of the slide covers the reaction chamber; and

a cover ~~configured to cover~~ that (a) is covering the cavity such that said slide is disposed between said cover and the reaction chamber ~~on a same side of the reaction chamber as the microarray slide when the microarray slide is within the cavity~~, and (b) [[~~to~~]] is sealingly ~~adhere~~ adhered with the mating surface of said body by non-removable adhering means on all but one edge of the mating surface, said all but one edge being unsealed to said cover.

Claim 2 (Original): The microarray cartridge of claim 1, wherein the non-removable adhering means comprises a heat seal between said cover and the mating surface of said body.

Claim 3 (Original): The microarray cartridge of claim 1, wherein the non-removable adhering means comprises a non-removable adhesive seal between said cover and the mating surface of said body.

Claim 4 (Original): The microarray cartridge of claim 1, wherein the non-removable adhering means does not include a mechanical fastener.

Claim 5 (Currently amended): The microarray cartridge of claim 1, further comprising a plurality of microarray supports within the cavity for positioning the microarray slide.

Claim 6 (Original): The microarray cartridge of claim 1, wherein the cartridge further comprises a first access site communicating with the reaction chamber for passing fluids from a delivery device and into the reaction chamber.

Claim 7 (Original): The microarray cartridge of claim 6, wherein the first access site is located on said body, wherein the access site is dimensioned to pass fluids from a fluid delivery device through the body wall and into the reaction chamber.

Claim 8 (Previously presented): The microarray cartridge of claim 6, wherein the body further comprises a first dimple feature in communication with the reaction chamber and the first access site, the first dimple feature forming a passage within the body for a fluid around a first edge of the microarray slide and into the reaction chamber when the microarray slide is placed in the cavity.

Claim 9 (Original): The microarray cartridge of claim 8, wherein the first access site is located on said body and communicates with said dimple feature, such that fluid from the fluid delivery device passes through the body wall and into the dimple feature.

Claim 10 (Original): The microarray cartridge of claim 8, wherein the first access site is located on said cover and communicates with said dimple feature, such that fluid from the fluid delivery device passes through the cover and into the dimple feature.

Claim 11 (Original): The microarray cartridge of claim 10, wherein the first access site is an open port and the fluid delivery device is a pipette dimensioned to deliver fluids through the port.

Claim 12 (Original): The microarray cartridge of claim 10, wherein the first access site has a thickness of between 0.003 and 0.015 inches, and the fluid delivery device is a needle for piercing through the access site and delivering fluids into the first dimple feature.

Claim 13 (Original): The microarray cartridge of claim 8, wherein said body further comprises a second dimple feature in communication with the reaction chamber, the second

dimple feature forming a passage for fluids around a second edge of the microarray slide and into the reaction chamber when the microarray slide is placed in the cavity.

Claim 14 (Original): The microarray cartridge of claim 13, wherein said cartridge further includes a second access site communicating with the second dimple feature for passing fluids into or out of the reaction chamber.

Claim 15 (Currently amended): The microarray cartridge of claim 6, wherein the first access site is an open end of the cartridge at said unsealed edge, said cartridge further comprising a flange feature at the open end to facilitate entry of a fluid delivery device through the first access site before sealingly cohering said cover to said body at the open end.

Claim 16 (Original): The microarray cartridge of claim 15, wherein the flange feature comprises a first flange attached to and extending from an edge of said body at the access site and a second flange attached to and extending from a corresponding edge of said cover, such that the first and second flanges facilitate passage of the fluid delivery device through the open end of the cartridge between the body and the cover.

Claim 17 (Original): The microarray cartridge of claim 1, wherein the body is thermoformed and the body wall has a thickness of less than 0.065 inch.

Claim 18 (Original): The microarray cartridge of claim 17, wherein the thickness is between 0.005 and 0.025 inch.

Claim 19 (Original): The microarray cartridge of claim 18, wherein the thickness is between .010 and .015 inch.

Claim 20 (Original): The microarray cartridge of claim 1, wherein the body is injection molded and the body wall has a thickness of less than 0.1 inch.

Claim 21 (Previously presented): The microarray cartridge of claim 20, wherein the thickness is between 0.032 and 0.075 inch.

Claim 22 (Previously presented): The microarray cartridge of claim 21, wherein the thickness is between 0.040 and 0.060 inches.

Claim 23 (Original): The microarray cartridge of claim 1, wherein the body includes a plurality of cavities, each of the plurality of cavities having a corresponding reaction chamber and at least one corresponding microarray support for supporting a microarray slide.

Claim 24 (Previously presented): The microarray cartridge of claim 23, wherein the plurality of cavities comprises at least four cavities.

Claim 25 (Original): The microarray cartridge of claim 1, wherein reaction chamber has a volume of at least 500 μL .

Claim 26 (Original): The microarray cartridge of claim 25, wherein the volume is at least 1 mL.

Claim 27 (Original): The microarray cartridge of claim 26, wherein the volume is 1 mL to 3 mL.

Claim 28 (Previously presented): The microarray cartridge of claim 1, wherein the body further comprises a plurality of obstacles within the reaction chamber arranged to affect motion of fluid within the chamber.

Claim 29 (Previously presented): The microarray cartridge of claim 28, wherein the obstacles are attached to a surface of the reaction chamber opposite the microarray slide.

Claim 30 (Canceled)

Claim 31 (Canceled)

Claim 32 (Currently amended): The microarray cartridge of claim [[~~31~~]] 1 wherein the microarray slide comprises an array of nucleic acid probes distributed on the surface of a glass substrate, and wherein the microarray slide is positioned such that the probes are in communication with a fluid in the reaction chamber.

Claim 33 (Original): The microarray cartridge of claim 32, wherein the fluid includes nucleic acid molecules under conditions conducive to hybridization between the nucleic acid molecules and the nucleic acid probes on the microarray.

Claims 34 - 68 (Canceled)

Claim 69 (Currently amended): The microarray cartridge of claim 1, wherein said cover contiguously extends from an edge of the mating surface and ~~is configured to~~ hingably ~~cover~~ covers the cavity and sealingly ~~adhere~~ adheres with the mating surface of said body.

Claim 70 (Canceled)

Claim 71 (New): A microarray cartridge, comprising:

a body having a wall forming a cavity surrounded by a mating surface, said body comprising a reaction chamber and at least one microarray support contained within the cavity, said at least one microarray support supporting a microarray slide within the cavity such that a surface of the slide covers the reaction chamber; and

a cover that (a) is covering the cavity such that said slide is disposed between said cover and the reaction chamber, and (b) is sealingly adhered with the mating surface of said body by non-removable adhering means, wherein said cavity is completely sealed.

Claim 72 (New): The microarray cartridge of claim 71, wherein the non-removable adhering means comprises a heat seal between said cover and the mating surface of said body.

Claim 73 (New): The microarray cartridge of claim 71, wherein the non-removable adhering means comprises a non-removable adhesive seal between said cover and the mating surface of said body.

Claim 74 (New): The microarray cartridge of claim 71, wherein the non-removable adhering means does not include a mechanical fastener.

Claim 75 (New): The microarray cartridge of claim 71, further comprising a plurality of microarray supports within the cavity for positioning the microarray slide.

Claim 76 (New): The microarray cartridge of claim 71, wherein the cartridge further comprises a first access site communicating with the reaction chamber for passing fluids from a delivery device and into the reaction chamber.

Claim 77 (New): The microarray cartridge of claim 76, wherein the first access site is located on said body, wherein the access site is dimensioned to pass fluids from a fluid delivery device through the body wall and into the reaction chamber.

Claim 78 (New): The microarray cartridge of claim 76, wherein the body further comprises a first dimple feature in communication with the reaction chamber and the first access site, the first dimple feature forming a passage within the body for a fluid around a first edge of the microarray slide and into the reaction chamber when the microarray slide is placed in the cavity.

Claim 79 (New): The microarray cartridge of claim 78, wherein the first access site is located on said body and communicates with said dimple feature, such that fluid from the fluid delivery device passes through the body wall and into the dimple feature.

Claim 80 (New): The microarray cartridge of claim 78, wherein the first access site is located on said cover and communicates with said dimple feature, such that fluid from the fluid delivery device passes through the cover and into the dimple feature.

Claim 81 (New) The microarray cartridge of claim 80, wherein the first access site has a thickness of between 0.003 and 0.015 inches, and the fluid delivery device is a needle for piercing through the access site and delivering fluids into the first dimple feature.

Claim 82 (New): The microarray cartridge of claim 78, wherein said body further comprises a second dimple feature in communication with the reaction chamber, the second dimple feature forming a passage for fluids around a second edge of the microarray slide and into the reaction chamber when the microarray slide is placed in the cavity.

Claim 83 (New): The microarray cartridge of claim 82, wherein said cartridge further includes a second access site communicating with the second dimple feature for passing fluids into or out of the reaction chamber.

Claim 84 (New): The microarray cartridge of claim 71, wherein the body is thermoformed and the body wall has a thickness of less than 0.065 inch.

Claim 85 (New): The microarray cartridge of claim 84, wherein the thickness is between 0.005 and 0.025 inch.

Claim 86 (New): The microarray cartridge of claim 85, wherein the thickness is between .010 and .015 inch.

Claim 87 (New): The microarray cartridge of claim 71, wherein the body is injection molded and the body wall has a thickness of less than 0.1 inch.

Claim 88 (New): The microarray cartridge of claim 87, wherein the thickness is between 0.032 and 0.075 inch.

Claim 89 (New): The microarray cartridge of claim 88, wherein the thickness is between 0.040 and 0.060 inches.

Claim 90 (New): The microarray cartridge of claim 71, wherein the body includes a plurality of cavities, each of the plurality of cavities having a corresponding reaction chamber and at least one corresponding microarray support supporting a microarray slide.

Claim 91 (Previously presented): The microarray cartridge of claim 90, wherein the plurality of cavities comprises at least four cavities.

Claim 92 (Original): The microarray cartridge of claim 71, wherein reaction chamber has a volume of at least 500 μL .

Claim 93 (New): The microarray cartridge of claim 92, wherein the volume is at least 1 mL.

Claim 94 (New): The microarray cartridge of claim 93, wherein the volume is 1 mL to 3 mL.

Claim 95 (New): The microarray cartridge of claim 71, wherein the body further comprises a plurality of obstacles within the reaction chamber arranged to affect motion of fluid within the chamber.

Claim 96 (New): The microarray cartridge of claim 95, wherein the obstacles are attached to a surface of the reaction chamber opposite the microarray slide.

Claim 97 (New): The microarray cartridge of claim 71, wherein the microarray slide comprises an array of nucleic acid probes distributed on the surface of a glass substrate, and wherein the microarray slide is positioned such that the probes are in communication with a fluid in the reaction chamber.

Claim 98 (New): The microarray cartridge of claim 97, wherein the fluid includes nucleic acid molecules under conditions conducive to hybridization between the nucleic acid molecules and the nucleic acid probes on the microarray.

Claim 99 (New): The microarray cartridge of claim 71, wherein said cover contiguously extends from an edge of the mating surface and hingably covers the cavity and sealingly adheres with the mating surface of said body.